

FEASIBILITY STUDY

NC 226
From NC 197 to NC 261
Mitchell County, R-2599

Prepared by
Planning and Research Branch
Division of Highways
N. C. Department of Transportation

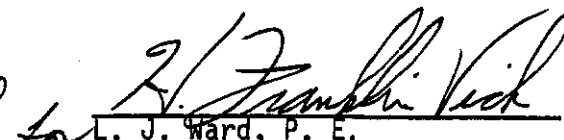


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I. GENERAL DESCRIPTION

This report covers the widening of NC 226 to an improved two-lane highway from NC 197 in the community of Red Hill to NC 261 in Bakersville. The project is 5.6 miles long and is shown on Figure 1. This project is included in the 1990-1996 Transportation Improvement Program for feasibility study and/or right-of-way protection. It is not currently funded for design, right-of-way, or construction.

II. PURPOSE OF PROJECT

NC 226 serves as a collector route in the rural area of Mitchell County and as a radial route into Bakersville, the Mitchell County seat. It also provides a connection between NC 197 in Red Hill and NC 261 in Bakersville. The road is an important truck route and is a scenic route for vacationers. NC 226 is classified as a rural major collector in the North Carolina Functional Classification System and is a Federal Aid Secondary Route.

The existing cross section on NC 226 consists of a paved roadway varying from 18 to 20 feet in width with unpaved shoulders varying from 2 to 3 feet in width. The horizontal alignment is fair and the vertical alignment generally good considering the rugged terrain of this mountainous area. All of the intersections along the project are at grade and all are stop sign controlled. The right-of-way throughout the project length is claimed 30 feet and is symmetrical about the existing centerline, with the exception of the last 300 feet of the project approaching the NC 261 intersection. At this location, property owners on the south side of NC 226 have paved to the edge of the roadway and there is no maintained shoulder. Therefore, the claimed right-of-way at this point is only the pavement width.

There is one bridge on the project where NC 226 crosses Cub Creek near the intersection of SR 1300. It is 22 feet long with 18-foot clear roadway width. It was built in 1935 and has a sufficiency rating of 64.9 out of a possible 100 points.

Roadside development is moderate along NC 226 with part of the alignment being bounded by the North Toe River on one side and steep rock cuts on the other. The eastern half of the project generally follows Cane Creek on its northern side. The CSX Railroad follows the North Toe River through Mitchell County and is bordering NC 226 where the river comes close to the roadway. The primary type of development is residential with a few businesses interspersed along the route. Overhead electrical power and telephone lines were observed along the entire route.

Traffic Volumes, Capacity, and Accident Record

The current traffic volume on NC 226 is 2500 vehicles per day (vpd). This volume is projected to increase to approximately 4400 vpd in the year 2010. Current traffic volumes include 2 percent TTST and 4 percent dual-tired trucks. NC 226 is currently operating at an acceptable level of service. However, as traffic volumes continue to grow, this highway will reach capacity before the end of the planning period, and traffic service will deteriorate. With the proposed improvements to NC 226, it will operate at Level of Service C or better throughout the planning period.

During the period from January 1, 1986 to September 30, 1989 a total of 35 accidents were reported on the studied portion of NC 226. This resulted in an accident rate of 288.5 accidents per 100 million vehicle miles (acc/100mvm), compared to a statewide average of 214.2 acc/100mvm for all two-lane, rural NC routes over the same period. There were no fatalities during the period, but 7 of the accidents resulted in injuries. The primary accident type involved vehicles running off the road. This type of accident accounted for 40 percent of the recorded accidents. The provision of a wider pavement and shoulders should reduce the potential for this type of accident.

Need for Project

The widening of the pavement and shoulders along with minor re-alignment of some of the higher degree curves of NC 226 will enhance the capacity, safety, and driving comfort along the highway. The existing roadway has several blind curves, and the shoulders on many sections are too narrow for disabled vehicles to pull off onto in case of an emergency.

III. RECOMMENDATIONS AND COSTS

It is recommended that NC 226 be widened to an improved two-lane roadway with adequate shoulders. The recommended cross section is a 22-foot paved roadway with 6-foot graded, usable shoulders. The existing bridge over Cub Creek should be replaced with a reinforced concrete box culvert due to the relatively low sufficiency rating and the 55-year age of the existing structure. The alignment should be generally symmetrical about the existing centerline, but it may be shifted slightly to avoid undue damage to development on one side or to provide an improved alignment. Widening to the inside of the curves should be utilized to improve the curvature and driver sight distance. These improvements would improve the capacity, safety, and driver comfort on NC 226.

The total estimated costs of this project are as follows:

Construction	\$ 6,600,000
Right-of-Way	<u>2,900,000</u>
Total	\$ 9,500,000

The construction cost includes engineering and contingencies, and the right-of-way cost includes relocation, acquisition, and utility costs.

IV. ENVIRONMENTAL EFFECTS

The implementation of the proposed project is not expected to result in any significant impact on the environment. Minor siltation of area streams may occur during construction. This impact should be minimized by the use of strict erosion control measures. The proposed widening will require the relocation of an estimated 23 residences and 6 businesses. The project will also result in increased noise levels for remaining development adjacent to the roadway. Increased noise levels from construction machinery and delay and inconvenience to motorists using NC 226 can be expected during the construction of the project, but will cease upon completion of the project.

V. FUTURE ACTIVITIES

If the project is to be implemented at a future date, all feasible alternatives and their associated impacts will need to be evaluated in a planning/environmental document prior to that time, and a final decision made as to the most appropriate improvement.

RBD/plr

